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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,363	10/25/2000	Swarn S. Kalsi	05770-146001	4609

7590

05/28/2002

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EXAMINER

MULLINS, BURTON S

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 05/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/696,363

Applicant(s)

KALSI

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25, 26 and 31 is/are allowed.
- 6) ☒ Claim(s) 1-3, 27 and 28 is/are rejected.
- 7) ☒ Claim(s) 4-24, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-3 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritz et al. (US 4,204,134) in view of Lloyd (US 5,066,638). Fritz teaches a coolant loop system for a superconducting rotor including: a superconducting field winding 7 and support (corresponding to the enclosure for winding 7; Fig.2); and a thermal reserve comprising damper 13 arranged "on" the winding and support since the damper is part of the rotor unit 18. The damper 13 is further coupled thermally to the field winding via a helium coolant system with tubes 6/12, evaporator 9 and mixing chamber 4. The coolant system maintains the temperature of the field winding at super-cooled temperatures of about 4.5 degrees K (c.3, lines 61-65). The coolant system also maintains the temperature of the damper at about 5-7 degrees K. Thus, the temperature differential between the field winding and the damper is not greater than 10 degrees K.

Fritz does not teach high-temperature superconductors, per se.

Lloyd teaches a high-temperature superconducting rotor. The benefits of high-temperature superconductors include improved efficiency through reduced winding losses and eddy current losses (c.1, lines 9-23).

It would have been obvious to one having ordinary skill in the art to provide a high-temperature superconductor winding per Lloyd for the superconducting winding of Fritz since

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the high temperature superconductor would have been desirable to reduce winding and eddy current losses and improve efficiency.

Regarding claims 2-3 and 28, the helium in the damper of Fritz is thermally conductive and electrically non-conductive.

Response to Arguments

3. Applicant's arguments filed 3-28-02 have been fully considered but they are not persuasive. Applicant argues that Fritz's damper or thermal reserve is not "on" the winding support. The examiner points out that the damper 13 is "on" the support (corresponding to the enclosure for winding 7) because the damper is necessarily integral with the rotor unit 18, as is the winding 7, the winding support, and the cold shield 29 (Fig.2). Although the damper 13 is shown diagrammatically as being "spaced apart" from the winding support, in practice the damper would be placed radially adjacent or "on" the winding support, with the cold shield placed radially adjacent or "on" the damper. The rotor 18 is an integral unit with each element "on" an element radially interior thereto.

Allowable Subject Matter

4. Claims 25-26 are allowed. The prior art, in particular Lloyd and Fritz, do not teach that the support is electrically isolated from the field winding and further do not teach an AC flux shield concentrically arranged about the field winding.

Claim 31 is allowed. The prior art does not teach a thermal reserve including ATTA which is thermally conductive and electrically nonconductive.

Claims 4-24 and 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 4-8, the prior art does not teach a thermal reserve comprising ceramic material, alumina, ATTA, Beryllium, electrically conductive material.

Regarding claim 12, the prior art does not teach or suggest banding about the thermal reserve.

Regarding claims 18 and 19, the prior art does not teach an outer layer of thermally non-conductive material arranged concentrically about the thermal reserve.

Regarding claim 30, the prior art, in particular Lloyd and Fritz, do not teach that the thermal reserve suppresses eddy currents.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
May 23, 2002